Building and Environment 106 (2016) 422–426

Contents lists available at ScienceDirect

Building and Environment

journal homepage: www.elsevier.com/locate/buildenv

Corrigendum to “Field studies of thermal comfort across multiple climate zones for the subcontinent: India model for adaptive comfort (IMAC)” [Building and Environment 98 (2016) 55–70]

Sanyogita Manu [a,*], Yash Shukla [a], Rajan Rawal [a], Leena E. Thomas [b], Richard de Dear [c]

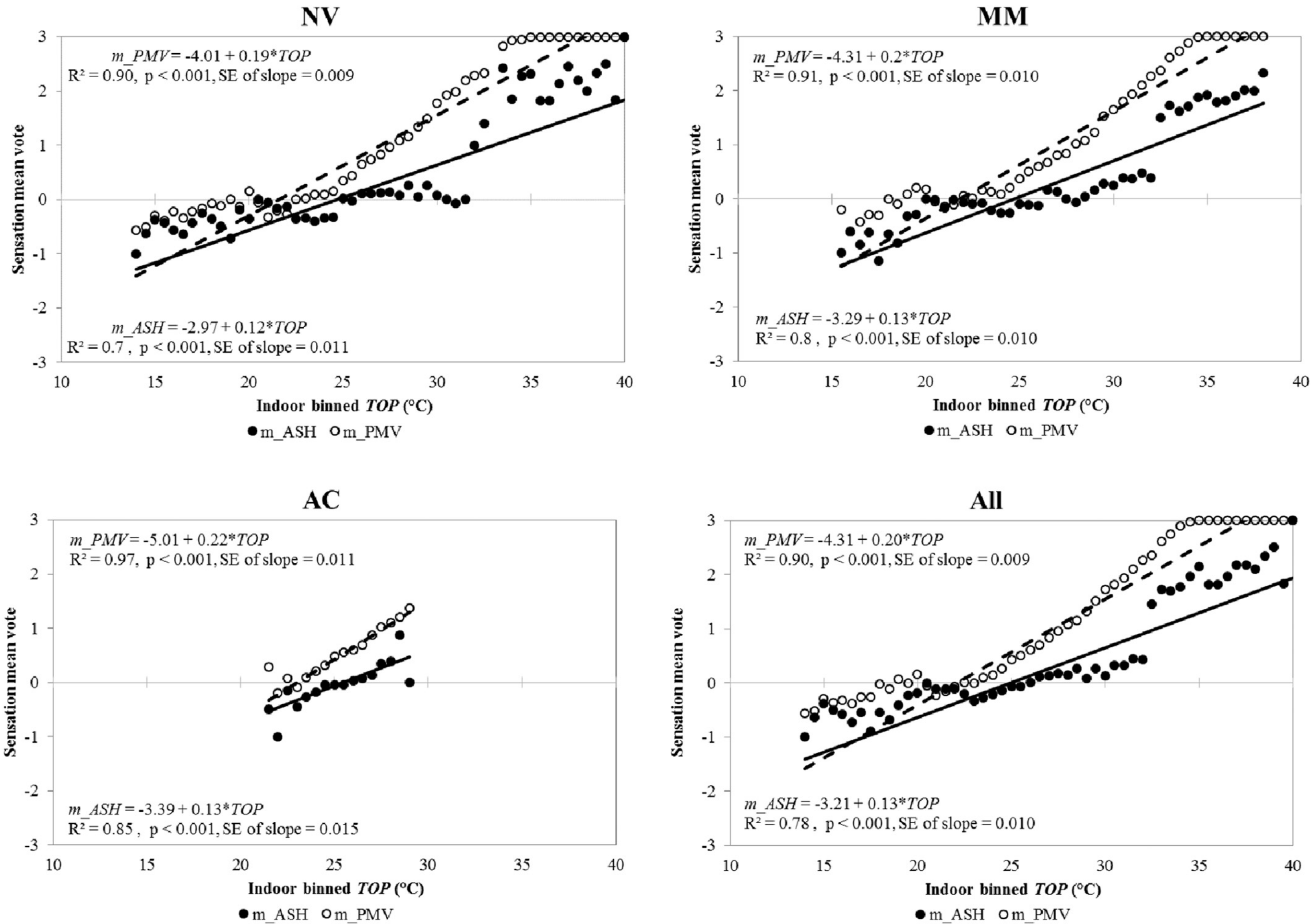
[a] Centre for Advanced Research in Building Science and Energy, CEPT University, Navrangpura, Ahmedabad 380009, India
[b] School of Architecture, Faculty of Design Architecture and Building, University of Technology, Sydney, Australia
[c] Faculty of Architecture, Design and Planning, The University of Sydney, Sydney, Australia

The authors regret the errors in Figs. 2, 5 and 6, Table 11 and the corresponding text. The corrections are listed below.
The authors would like to apologise for any inconvenience caused.

DOI of original article: http://dx.doi.org/10.1016/j.buildenv.2015.12.019.
* Corresponding author.
E-mail address: sanyogitamanu@cept.ac.in (S. Manu).

http://dx.doi.org/10.1016/j.buildenv.2016.07.015

Fig. 2 ‘Dependence of observed and predicted sensation on indoor operative temperature’ has been updated as follows:



Section 3.1

In the third paragraph, the following text appears (based on Fig. 2):

“For all building types, and more importantly for the AC buildings, the *m_PMV* gradient was higher than that of *m_ASH*, which shows that the PMV model predicted higher sensitivity of the occupants to indoor *TOP* as compared to what was observed in the field. The gap between the regression lines shows that at any given indoor *TOP*, PMV model predicted the sensation to be warmer than was observed on the right-here-right-now seven point thermal sensation scale. A Z-statistical test was run to compare the regression coefficients of the *m_PMV* and *m_ASH* regression models for every building mode aggregate and the coefficients were found to be significantly different ($p < 0.05$) in all cases.”

This should read:

“For all building types, and more importantly for the AC buildings, the *m_PMV* gradient was higher than that of *m_ASH*, which shows that the PMV model predicted higher sensitivity of the occupants to indoor *TOP* as compared to what was observed in the field. The gap between the regression lines shows that at indoor *TOP* higher than 16 °C, PMV model predicted the sensation to be warmer than was observed on the right-here-right-now seven point thermal sensation scale for NV and MM buildings. A Z-statistical test was run to compare the regression coefficients of the *m_PMV* and *m_ASH* regression models for every building mode aggregate and the coefficients were found to be significantly different ($p < 0.05$) in all cases.”

Section 3.1

In the fourth paragraph, the following text appears (based on Fig. 2):

“The difference between predicted sensation derived from Fanger's PMV model and observed thermal sensation derived from occupant responses on the questionnaire, showed significant variations ranging from 0.5 unit sensation vote at 21.5 °C indoor *TOP*, to 1 full unit at 29 °C for AC dataset, with the predicted sensation was always warmer than the observed. The results clearly demonstrate a preference for warmer temperatures and suggest a high level of adaptation in Indian buildings.”

This should read:

"The difference in trends between predicted sensation derived from Fanger's PMV model and observed thermal sensation derived from occupant responses on the questionnaire, showed variations ranging from 0.2 unit sensation vote at 21.5 °C indoor *TOP*, to 0.8 unit at 29 °C for AC dataset, where the predicted sensation was always warmer than the observed. The results clearly demonstrate a preference for warmer temperatures and suggest a high level of adaptation in Indian buildings."

Table 11 'Statistical summary of the thermal insulation variable *INSUL* (clothing + chair*) (clo)' has been updated as follows:

	NV	MM	AC
No. of 'Building + Season' aggregates results in summer[a]	7	7	3
Mean *INSUL* (±SD) in summer °C	0.61 (±0.11)	0.65 (±0.11)	0.66 (±0.07)
No. of 'Building + Season' aggregates results in monsoon[a]	7	10	3
Mean *INSUL* (±SD) in monsoon °C	0.70 (±0.14)	0.68 (±0.13)	0.68 (±0.09)
No. of 'Building + Season' aggregates results in winter[a]	7	7	3
Mean *INSUL* (±SD) in winter °C	1.09 (±0.45)	1.15 (±0.45)	0.85 (±0.21)

[a] clo value of 0.15 was added to clothing insulation for chairs with cushions from ASHRAE 55-2010.

Fig. 5 'Clothing insulation inside buildings (mean ± SD) as a function of mean indoor operative temperatures' has been updated as follows:

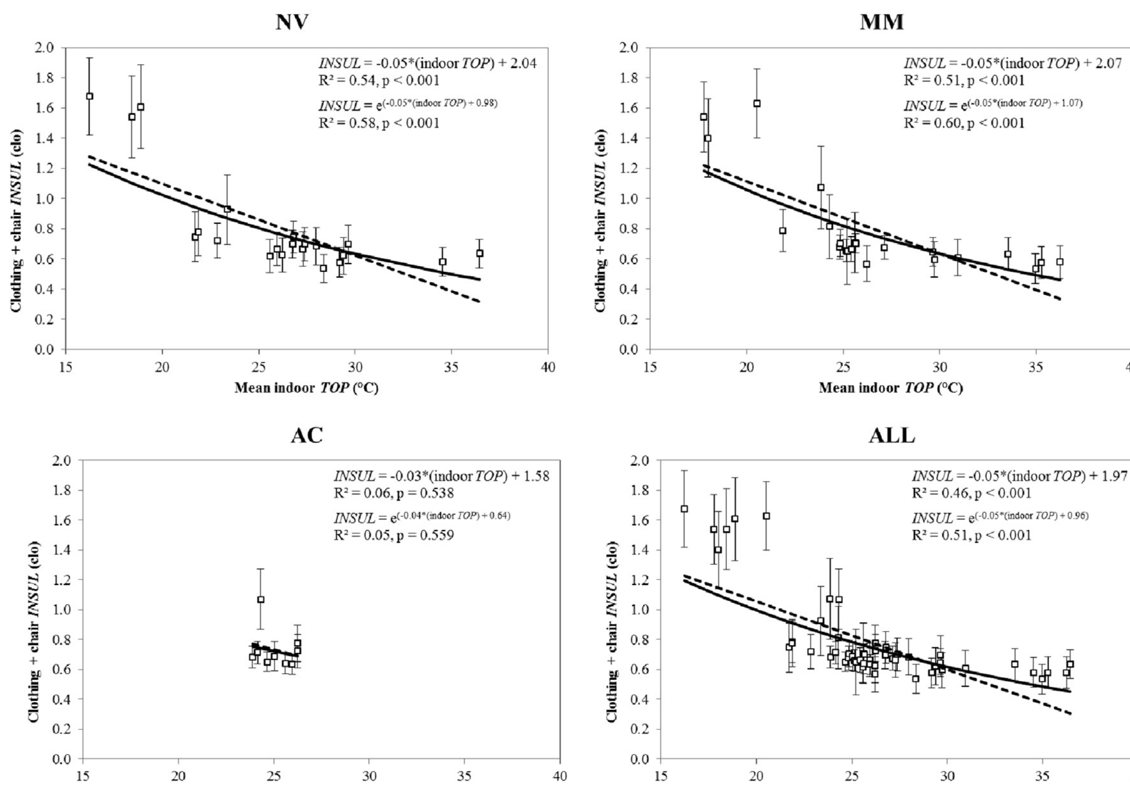
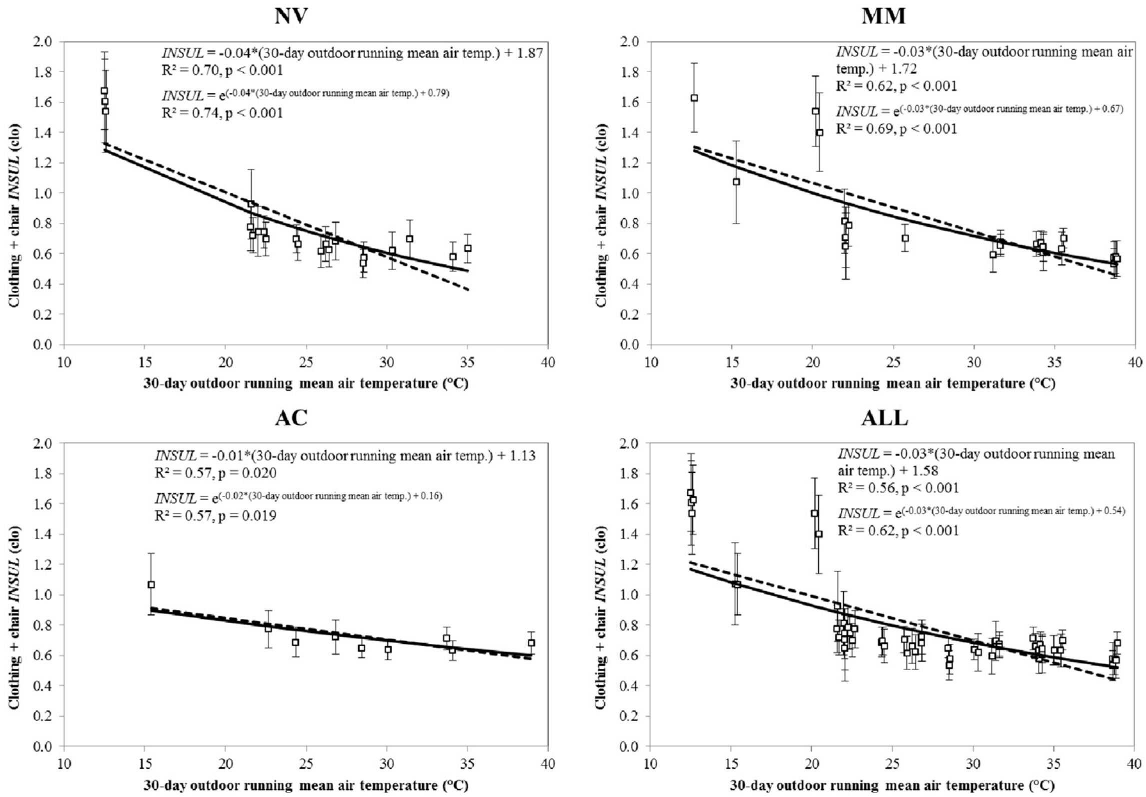


Fig. 6 ‘Clothing insulation inside buildings (mean ± SD) as a function of outdoor temperature’ has been updated as follows:



Section 4.1

In the first paragraph, the following text appears (based on Table 11):

“Table 11 indicates significant seasonal differences in thermal insulation, with average summer *INSUL* values of 0.8 clo for NV buildings and 0.9 clo for MM and AC, average winter values exceeding 1.6 clo for NV and MM buildings and 1.3 clo for AC. Average monsoon *INSUL* values were very close to the summer *INSUL* values for NV and MM buildings. Building mean insulation values showed slightly greater variability in MM buildings in summer and monsoon as compared to the NV and AC sample.”

This should read:

“Table 11 indicates significant seasonal differences in thermal insulation, with average summer *INSUL* values of 0.6 clo for NV buildings and 0.65 clo for MM and AC, average winter values exceeding 1.0 clo for NV and MM buildings and 0.8 clo for AC. Average monsoon *INSUL* values were very close to the summer *INSUL* values for MM buildings. Building mean insulation values showed greater variability in NV and MM buildings in summer and monsoon as compared to the AC sample.”

Section 4.1

In the second paragraph, the following text appears (based on Fig. 5):

“For indoor temperatures over 30 °C, there seemed to be no recognizable trends in clothing insulation so the data for which the regressions were run was truncated beyond 30 °C. The graphs indicate a statistically significant relationship between thermal insulation and mean indoor *TOP* for NV and MM buildings. For these building types, the exponential model provided a better fit than the straight line. The model for AC buildings failed to achieve significance possibly due to the narrow range of indoor temperatures recorded in these buildings as compared to the NV and MM datasets.”

This should read:

“The graphs indicate a statistically significant relationship between thermal insulation and mean indoor *TOP* for NV and MM buildings. For these building types, the exponential model provided a better fit than the straight line. The model for AC buildings failed to achieve significance possibly due to the narrow range of indoor temperatures recorded in these buildings as compared to the NV and MM datasets.”

Section 4.1

In the fourth paragraph, the following text appears (based on Fig. 6):

“The graphs indicate a statistically significant relationship between thermal insulation and outdoor temperature for NV buildings, with the exponential model providing a better fit than the straight line and explaining 90% of the variance in *INSUL* values by variations in outdoor temperature. Thermal insulation was also found to decay exponentially with outdoor temperature in MM buildings where the regression model accounted for 64% of the variance in insulation. However, in the case of AC buildings, a straight line regression model produced the best fit for the data, with only 47% variance being explained. The rate of insulation change with respect to 30-day outdoor running mean air temperature was almost one tenth of an *INSUL* unit for every five degrees of outdoor temperature change. This gradient was steeper in NV and MM buildings.”

This should read:

“The graphs indicate a statistically significant relationship between thermal insulation and outdoor temperature for NV buildings, with the exponential model providing a better fit than the straight line and explaining 74% of the variance in *INSUL* values by variations in outdoor temperature. Thermal insulation was also found to decay exponentially with outdoor temperature in MM buildings where the regression model accounted for 69% of the variance in insulation. However, in the case of AC buildings, a straight line regression model explained 57% variance in *INSUL* values. The rate of insulation change with respect to 30-day outdoor running mean air temperature was almost one tenth of an *INSUL* unit for every 10K of outdoor temperature change. This gradient was steeper in NV and MM buildings.”